

REMARKS

This is a full and timely response to the outstanding final Office action of November 14, 2006. Reconsideration and allowance of the application and presently pending claims, as amended, are respectfully requested.

Present Status of Patent Application

Claims 1-2, 6-11, and 14-19 are pending in the present application. The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

Response to Rejections Under 35 U.S.C. 103 (a)

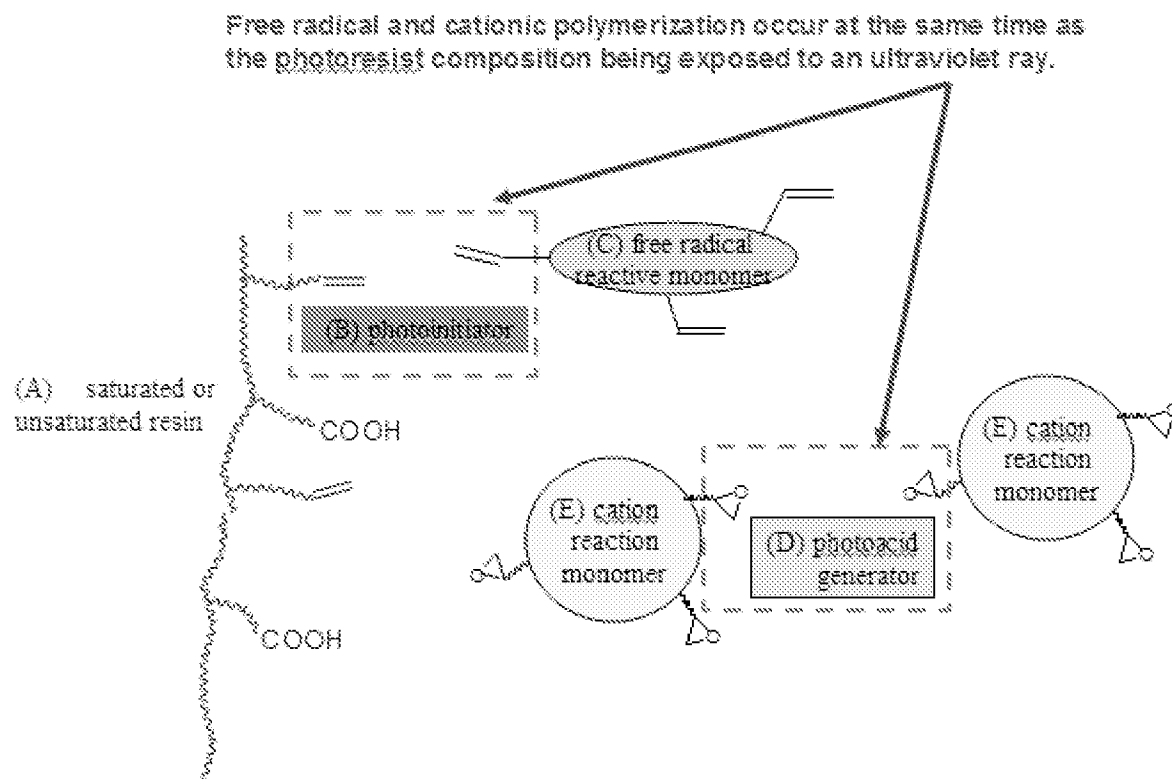
The Examiner rejects claims 1, 2, 6-11 and 14-19 under 35 U.S.C. 103 (a) as being unpatentable over Nojima (US 6,399,277) in view of Schultz (US 6,306,555). Applicant respectfully traverses and continues to fundamentally disagree with the Examiner's arguments with respect to the teachings of Nojima and Schultz.

Applicant respectfully submits that claim 1 does not be obvious by Nojima in view of Schultz for the reasons discussed below. Specifically, Applicant continues to assert that the negative photoresist compositions of claim 1 differ fundamentally both in makeup and in use from the solder resist compositions taught by Nojima, and that one of skill in the art would not be motivated to substitute the setting adhesion-imparting initiator compounds of Nojima with the photoacid generator compounds of Schultz.

First, the compositions of claim 1 and Nojima include different components/reactants and these reactants have significantly different mechanisms of

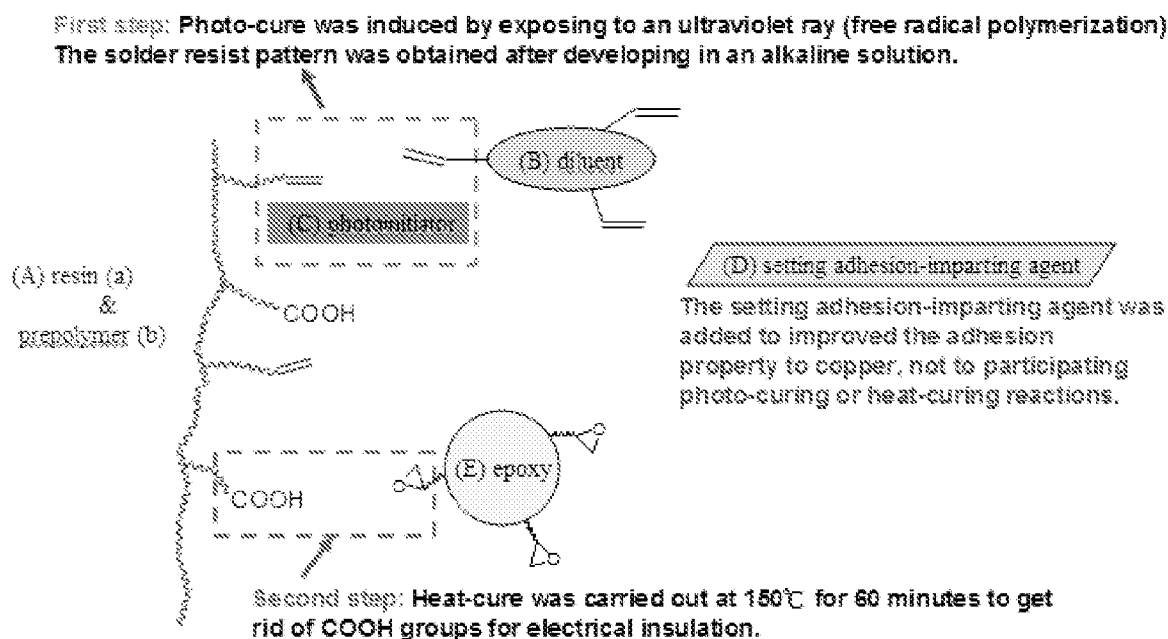
reaction, as described in the figures below. The compositions of claim 1 include photoinitiator components, free radical reactive monomers, photoacid generators, and cation reaction monomers which all react with the resin compound upon exposure to UV light, such that free radical and cationic polymerization occur simultaneously (Figure 1, below). As a result, all COOH groups of the saturated or unsaturated resin are completely reacted after UV exposure.

Figure 1: Reaction mechanism of the a composition according to claim 1 of the present application:



In contrast, in Nojima, the type and amount of setting adhesion-imparting agent in Nojima does not serve as a cationic photopolymerization catalyst, or it would result in cationic reaction in the first step, and there would not be enough unreacted COOH groups remaining in the resin to react with the epoxy, as shown in Figure 2, below.

Figure 2: Reaction mechanism of Nojima (US 6,399,277 B1):



Thus, Applicants submit that Nojima does not teach, suggest, or disclose the compositions of claim 1, in particular the photoacid generator, as discussed above. Applicants further submit that Schultz does not remedy the deficiencies of Nojima. Applicants respectfully traverse the Examiner's suggestion that Schultz discloses the functional equivalence of the triflate onium salts to the hexafluorantimonate anions of Nojima. First, neither reference appears to teaches the specific photoacid generator compounds of claim1.

Second one of skill in the art reading Nojima would not look to Schultz to replace the setting adhesion-imparting agent with the photoacid generator of Schultz, because, as discussed above, the compounds, when used in the claimed amounts, would result in complete reaction of the COOH groups of the resin and prevent reaction of the COOH groups with the epoxy component in a heat cure step. Nojima thus teaches away from the use of such photoacid generator compounds. A claim cannot be deemed obvious in view of a reference if the reference “teaches away” from the claim. See *In re Gurley*, 2 F.3d 551, 31 USPQ2d 1130, 1131 (Fed Cir. 1994). Specifically, “[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant....” *Id.* (emphasis added). In the instant case, one of ordinary skill in the art reading Nojima would be led away from the use of the photoacid generator of Schultz because this would render superfluous a crucial step of Nojima, the heat cure step. The heat cure step of Nojima, as described above is to react unreacted COOH groups on the resin with the epoxy. However, if the photoacid generators of claim 1 are used in the claimed amounts, then all COOH groups would be reacted in the first step, and the heat cure step taught by Nojima would be superfluous. Therefore, Applicant submits that neither Nojima nor Schultz disclose, teach, or suggest the use the claimed photoacid generators in the composition of claim 1.

As previously argued, the Examiner is reminded that to establish a prima facie case of obviousness, **three criteria must be met**. First, **there must be some suggestion or motivation**, either in the references themselves or in the knowledge

generally available to one of ordinary skill in the art, to modify the reference or to combine reference teaching. Second, **there must be a reasonable expectation of success**, according to MPEP 2142. The applicant submits that the Examiner has failed to satisfy these criteria in asserting that the rejected claim is obvious in view of Nojima combined with the Schultz.

Nojima discloses a photopolymerizable **thermosetting** resin composition for forming a solid resist used in PCB (printed circuit board), and in general the solid resist **would not apt to be removed after forming**.

However, neither Schultz nor this invention relate to a photopolymerizable **thermosetting** resin composition. Therefore, Schultz's patent does not teach methods which solve the same problems as the Nojima. Thus, there is no **suggestion or motivation**, either in the references themselves or in knowledge generally available to one of ordinary skill in the art, to modify the references or combine reference teachings. The Examiner is also reminded that "the teaching or suggestion to make the claimed combination must both be found in the prior art, not in applicant's disclosure." MPEP 2143 citing *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The Applicant submits that motivation to combine Nojima et al. with Schultz's patent is provided by the Applicant's disclosure, and not by the prior art.

As well, the Examiner is reminded that "The mere fact that it is possible to find two isolated disclosures that might be combined in such a way to produce a new compound does not necessarily render such production obvious unless the art also contain something to suggest the desirability of the proposed combination. In the absence of such a reference suggestion, there is inadequate support for the position

that the required modification would prima facie have been obvious.” *In re Grabiak*, 226 U.S.P.Q. 870 (Fed. Cir. 1985).

Further, since the reaction mechanism between the references are different, the combination cannot be a reasonable expectation of success. As discussed above, if the references were, in fact, combined the use of the photoacid generators of Schultz, would disrupt the reaction scheme of Nojima and would therefore be contrary to the teachings and purpose of Nojima.

For the reasons stated above, Applicant respectfully submits that claim 1 is allowable over Nojima in view of Schultz. Further, dependent claims 2, 6-11, and 14-19 are believed to be allowable for at least the reasons recited above for independent claim 1. *In re Fine, Minnesota Mining and Mfg.Co. v. Chemque, Inc.*, 303 F.3d 1294, 1299 (Fed. Cir. 2002).

CONCLUSIONS

Applicant submits that all rejections have been overcome by the above remarks and respectfully requests allowance of all pending claims.

In addition, any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and official notice, or statements interpreted similarly, should not be considered well known since the Office Action does not include specific factual findings predicated on sound technical and scientific reasoning to support such conclusions.

Should the Examiner believe that a teleconference would be helpful to expedite the examination of this application, the Examiner is invited to contact the undersigned.

No fee is believed to be due in connection with this amendment and response. If, however, any fee is deemed to be payable, you are hereby authorized to charge any such fee to Deposit Account No. 20-0778.

Respectfully submitted,

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